

ENHANCED DISK ARRAY

Abstract

An enhanced disk array is described. The enhanced disk includes a plurality of disk drives for storing distributed parity groups. Each distributed parity group has a number of storage blocks including one or more data blocks and a parity block. Each of the storage blocks is stored on a separate disk drive such that no two storage blocks from a given parity group reside on the same disk drive. File system metadata describes a location of each storage block by specifying a disk identifier and a logical block identifier of a first logical block of each storage block. An allocation module allocates space for a new distributed parity group on two or more disk drives by allocating space for each storage block of the new distributed parity group from free space on each of the disk drives.

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